Trend Study 16C-43-04

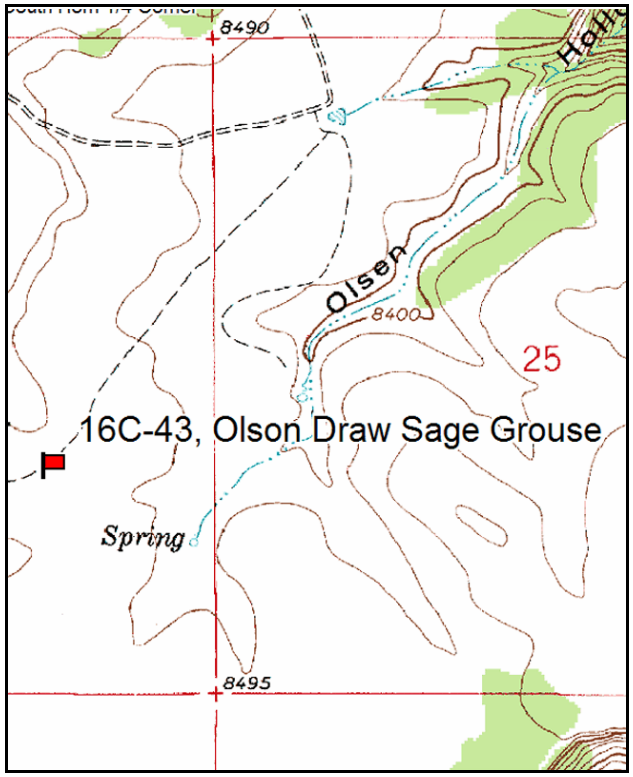
Study site name: Olson Draw Sage Grouse . Vegetation type: Sagebrush/grass .

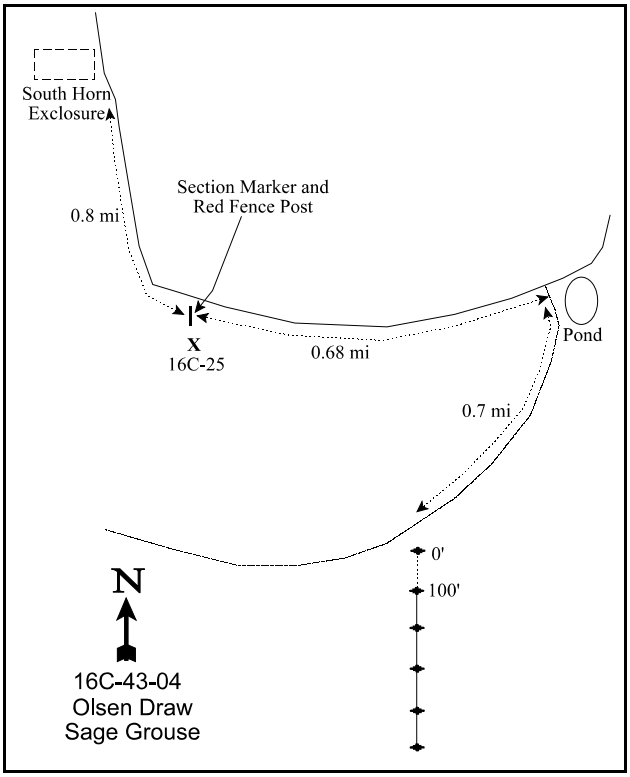
Compass bearing: frequency baseline 200 degrees magnetic.

Frequency belt placement: line 1 (11ft), line 2 (34ft), line 3 (59ft), line 4 (71ft), line 5 (95ft).

LOCATION DESCRIPTION

From the South Horn exclosure (by study #16C-24), continue south on the main USGS road for 0.8 miles to a USGS landline marker by a tall red fencepost on the right side of the road. Continue 0.68 miles and turn right before the pond on a two track. There may be a faint road going off to the left, but stay right for 0.7 miles. The site is on the left hand side of the road. Use a GPS unit to get to the beginning of the baseline.





Map Name: The Cap

Diagrammatic Sketch

Township 19S , Range 6E , Section 26

GPS: NAD 27, UTM 12S 4331790 N, 481768 E

DISCUSSION

Olson Draw Sage Grouse - Trend Study No. 16C-43

The Olson Draw Sage Grouse site was established in 2004 to monitor sage grouse nesting and brooding habitat. It also provides a good area for wintering elk. There is an active lek just southeast of this site. The site has a slope of about 3-10% with a north-northeast aspect. Elevation is approximately 8,450 feet. It samples a mountain big sagebrush community. Pellet group data from 2004 estimate 137 elk, 4 deer, 4 cow days use/acre, and 96 sage grouse pellet groups/acre (337 edu/ha, 10ddu/ha, 11 cdu/ha, and 236 sgp/ha). Cow use was from this year and cattle were on the site during data collection. This area is part of the Horn Mountain grazing allotment managed by the Forest Service. Elk and deer use was from winter use. Moderate number of sage grouse pellet groups on the site, although pellet transect didn't pick them up because they were very clumped in an area.

The soil is moderately shallow with an effective rooting depth estimated at 15 inches. A slight compacted layer was encountered about 8 inches down. It does not appear to be continuos or a rooting barrier. Soil texture is a sandy clay loam with a neutral pH (7.1). There is very little rock in the soil profile or on the surface. Stoniness measurements are more a reflection of soil compaction since no rock was contacted. The ground is covered with a moderate percent of litter and vegetation with some bare soil. Erosion is minimal, although soil movement has created some pedestaling. The erosion condition class determined soil movement as stable to slightly eroding in 2004.

Mountain big sagebrush is the key browse on this site. Density of mountain big sagebrush was estimated at 3,480 plants/acre. Mostly a mature population, although seedlings were abundant this year while few young plants were found. Utilization was moderate to heavy and vigor overall is good. Percent decadence was moderately high at 48% with 24% of the total population classified as dying. The high decadency without better recruitment may cause a decrease in density of the sagebrush. Density of low rabbitbrush is scattered and in low numbers. A few serviceberry are on the site, although none were sampled within the density strip.

The herbaceous understory has several perennial grasses creating a fairly dense ground cover between the sagebrush. Perennial grasses account for 32% of the total cover on this site. Salina wildrye is the dominate grass and is 42% of the grass cover. Mutton bluegrass, western wheatgrass, and Indian rice grass are also common in the understory. Forbs are very diverse and account for 15% of the ground cover. Several species that are important to sage grouse are located on this site, such as Watson's penstemon, hawksbeard, trifolium spp., and two milkvetch species (Beck and Mitchell 1997).

2004 APPARENT TREND ASSESSMENT

Soil shows a little sign of erosion mostly in the appearance of pedestaling. There is good protective cover in the understory and a moderate amount of bare ground in the interspace. Key browse species, mountain big sagebrush, appears moderately healthy. Use is moderate to heavy and vigor is good. Seedling recruitment was high, but recruitment of young was low. Percent decadency was moderately high at 48% and about one-half of those were classified as dying. This could be a potential problem in the future if several of the mature plants die. Understory vegetation has good ground cover. There is a good diversity of perennial grasses and forbs. Forbs are not as dominated as the grasses, but provide fair cover and several are excellent food for sage grouse. The Desirable Components Index (see methods) rated this site as fair with a score of 59 due to good shrub cover, few young shrubs, high decadence, and excellent grass and forb cover.

winter range condition (DC Index) - 59 (fair) Mountain big sagebrush type

HERBACEOUS TRENDS --
Management unit 16C, Study no: 43

Type	Species	Nested Frequency '04	Average Cover % '04
G	Agropyron smithii	92	1.27
G	Agropyron spicatum	7	.04
G	Elymus salina	132	5.01
G	Koeleria cristata	1	.03
G	Oryzopsis hymenoides	19	.79
G	Poa fendleriana	106	3.51
G	Sitanion hystrix	28	.67
G	Stipa comata	5	.04
G	Stipa spp.	12	.45
Total for Annual Grasses		0	0
Total for Perennial Grasses		402	11.84
Total for Grasses		402	11.84
F	Arabis spp.	9	.02
F	Astragalus convallarius	12	.13
F	Astragalus tenellus	16	.52
F	Astragalus spp.	5	.15
F	Chenopodium album (a)	69	.20
F	Comandra pallida	4	.03
F	Collinsia parviflora (a)	1	.00
F	Crepis acuminata	43	.80
F	Cryptantha spp.	6	.01
F	Erigeron eatonii	17	.27
F	Erigeron pumilus	1	.00
F	Eriogonum racemosum	10	.29
F	Eriogonum umbellatum	15	.16
F	Gayophytum ramosissimum(a)	2	.01
F	Lappula occidentalis (a)	3	.01
F	Machaeranthera canescens	1	.03
F	Penstemon caespitosus	11	.21
F	Penstemon watsonii	24	1.24
F	Phlox austromontana	22	.21
F	Polygonum douglasii (a)	27	.10
F	Potentilla spp.	12	.16
F	Schoencrambe linifolia	36	.18
F	Senecio multilobatus	2	.01

Type	Species	Nested Frequency '04	Average Cover % '04
F	Trifolium spp.	62	.64
Total for Annual Forbs		102	0.33
Total for Perennial Forbs		308	5.11
Total for Forbs		410	5.45

Values with different subscript letters are significantly different at alpha = 0.10

BROWSE TRENDS --
Management unit 16C, Study no: 43

Type	Species	Strip Frequency '04	Average Cover % '04
B	Artemisia tridentata vaseyana	88	16.10
B	Chrysothamnus depressus	1	-
B	Chrysothamnus viscidiflorus viscidiflorus	64	3.93
B	Gutierrezia sarothrae	14	.09
B	Pediocactus simpsonii	1	-
B	Symphoricarpos oreophilus	1	-
B	Tetradymia canescens	1	-
Total for Browse		170	20.12

CANOPY COVER, LINE INTERCEPT --
Management unit 16C, Study no: 43

Species	Percent Cover '04
Artemisia tridentata vaseyana	16.56
Chrysothamnus viscidiflorus viscidiflorus	5.05

KEY BROWSE ANNUAL LEADER GROWTH --
Management unit 16C, Study no: 43

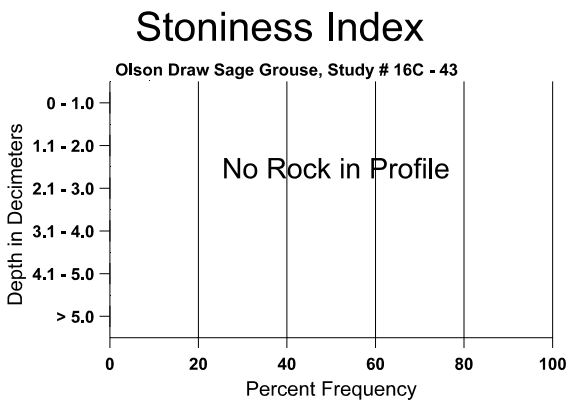
Species	Average leader growth (in) '04
Artemisia tridentata vaseyana	1.9

BASIC COVER --
Management unit 16C, Study no: 43

Cover Type	Average Cover % '04
Vegetation	33.25
Rock	.14
Pavement	1.16
Litter	44.95
Cryptogams	.22
Bare Ground	35.24

SOIL ANALYSIS DATA --
Management unit 16C, Study no: 43, Study Name: Olsen Draw Sage Grouse

Effective rooting depth (in)	Temp °F (depth)	pH	%sand	%silt	%clay	%0M	PPM P	PPM K	ds/m
10.4	51.2 (11.0)	7.1	61.3	15.2	23.6	2.0	14.3	249.6	0.8



PELLET GROUP DATA --
Management unit 16C, Study no: 43

Type	Quadrat Frequency '04	Days use per acre (ha) '04
Rabbit	5	-
Elk	42	137 (337)
Deer	4	4 (10)
Cattle	1	4 (11)

BROWSE CHARACTERISTICS --
Management unit 16C, Study no: 43

		Age class distribution (plants per acre)					Utilization					
Year	Plants per Acre (excluding seedlings)	Seedling	Young	Mature	Decadent	Dead	% moderate	% heavy	% decadent	% dying	% poor vigor	Average Height Crown (in)
Amelanchier utahensis												
04	**0**	-	-	-	-	-	0	0	-	-	0	4/11
Artemisia tridentata vaseyana												
04	**3480**	2240	80	1740	1660	1140	35	37	48	24	24	24/34
Chrysothamnus depressus												
04	**20**	-	-	20	-	-	0	0	-	-	0	5/9
Chrysothamnus viscidiflorus viscidiflorus												
04	**3800**	80	20	3780	-	-	0	0	-	-	0	9/13
Gutierrezia sarothrae												
04	**720**	60	-	720	-	-	0	0	-	-	0	6/10
Pediocactus simpsonii												
04	**20**	-	-	20	-	-	0	0	-	-	0	2/3
Symphoricarpos oreophilus												
04	**20**	-	-	20	-	-	0	0	-	-	0	-/-
Tetradymia canescens												
04	**20**	-	-	20	-	-	0	0	-	-	0	5/8